



DEXcom - The DEXIS DICOM Networking Component

Preliminary Description Dec. 17, 2004

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- The components reading and writing JPEG files are based on the work of the Independent JPEG Group.
- The DICOM Networking Interface contains software from the DCMTK library. That software is copyright Kuratorium OFFIS e.V.
- The software includes software libraries copyrighted by Microsoft, Inc.

CHAPTER 1

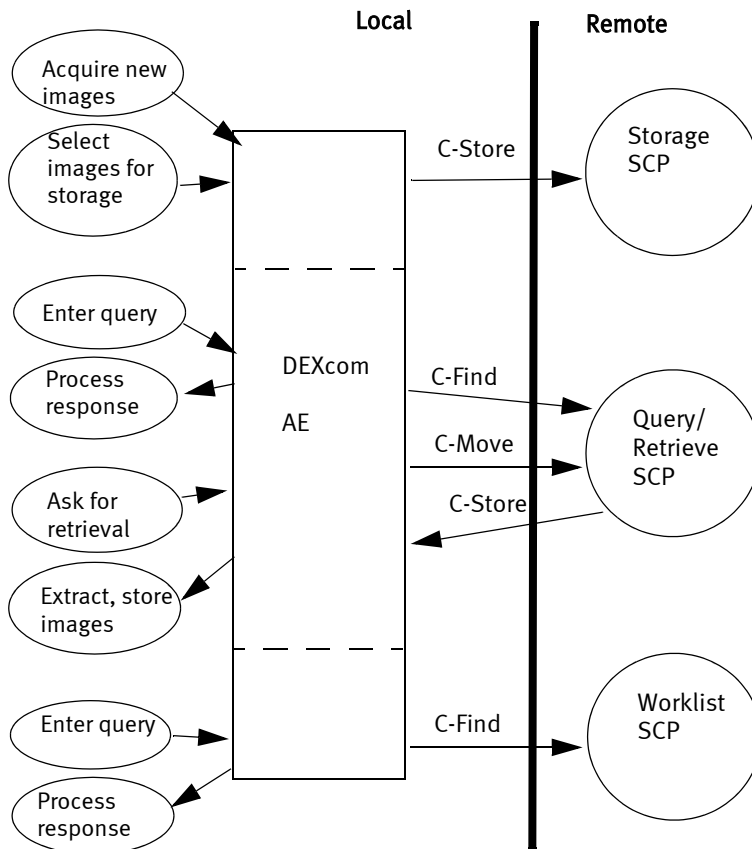
Introduction

1.1 WHAT IS DEXCOM?

DEXcom is the DICOM networking component of the DEXIS Software. It is an add-on to the DEXIS Software implementing communication with DICOM servers. The DEXcom component is therefore only needed by large enterprises running a DICOM conformant hospital management system. The DEXIS Software connecting to such a system and thus including the DEXcom component is called *DEXIS Enterprise Edition*.

The DEXcom component (or *Application Entity* in DICOM terms) implements the following DICOM functionality:

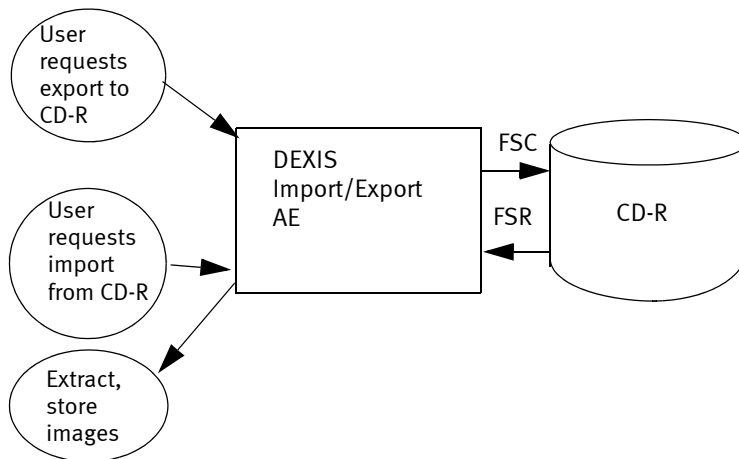
- DEXcom can verify communication with a DICOM server; it is thus a Service Class User (SCU) of the Verification Service Class.
- DEXcom can store images on a DICOM server; it is thus a Service Class User (SCU) of the Storage Service Class.
- DEXcom can query DICOM servers for patients, studies, series, and images; it is thus a Service Class User (SCU) of the Query/Retrieve Service Class.
- DEXcom can receive images from a DICOM server and store them in its local database; during this operation it serves thus as a Service Class Provider (SCP) of the Storage Service Class.
- DEXcom can query Modality Worklist Servers for entries; it is thus a Service Class User (SCU) of the Modality Worklist Service Class.



The DICOM Removable Media functionality is realized in the *DEXIS Import/Export Application Entity*, which is included in the standard DEXIS software and is therefore independent of the DEXcom component. The DEXIS Import/Export Application Entity provides the following DICOM functionality:

- DEXIS can export DICOM File Sets to removable media; it thus serves as DICOM File Set Creator (FSC). If the images are not internally stored in DICOM file format, they are converted when exported.

- DEXIS can browse through DICOM File Sets on removable media and can import images from these file sets; it thus serves as DICOM File Set Reader (FSR).



Note: The DICOM Import/Export functionality is described in the DEXIS User Manual. This manual describes the DICOM Networking functionality only.

CHAPTER 2

DEXcom Installation

2.1 SOFTWARE INSTALLATION

2.1.1 RUNNING THE INSTALLATION PROGRAM

To begin the installation, insert the DEXIS Enterprise Edition installation CD into your CD-ROM drive. The CD is equipped with an “Autorun” feature and will start on its own. Should the “Autorun” feature not work with the CD-ROM drive in your computer, you can launch the installation menu manually: Double-click on the “My Computer” icon on your desktop, then open the CD-ROM drive by double-clicking on its icon, then double-click on the “DEX-menu” icon.

Select your language

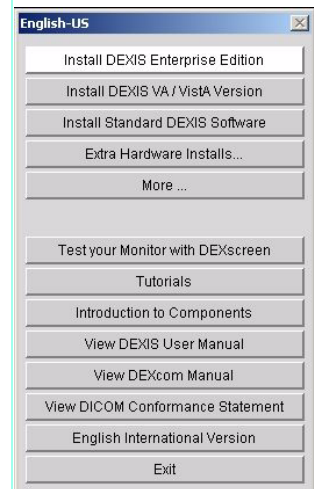
If your CD offers the choice, choose **English-U.S.**, as international versions give international tooth numbers that differ from those used in the U.S.. The Software CD for distribution in the U.S. does not offer this choice and automatically advances to the next step.

Select software

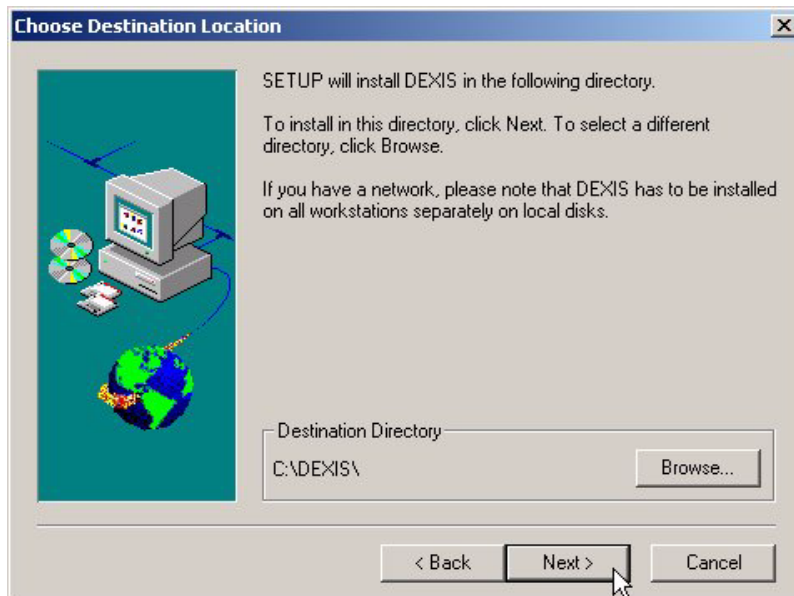
Click on *Install DEXIS Enterprise Edition* to install all the major components of the DEXIS program. The also offered *VA / Vista Version* is a restricted DICOM networking client adapted specially to the Vista software of the U.S. Veterans Administration.

Choose destination location

During the installation process you will be asked for the folder into which the software should be installed. Typically you should accept the default



folder, which is “C:\DEXIS\.” In any event, this must be a folder on a local hard disk, not on a network drive.



Note: If this is an upgrade, please make sure to install the new software into the same folder as the older DEXIS version. It will overwrite the existing program and will not destroy your data. **Do not uninstall** the older version unless requested to do so by DEXIS Technical Support.

Select data directory

Next, you will be asked where you would like to store DEXIS data. Typically, this will be “C:\DEXIS\Data” for the Enterprise Edition, because the folder entered here is used for local storage of images. The DICOM Storage Server is entered later. See xxx.

Follow the on-screen directions until DEXIS Enterprise Edition is successfully installed.



Install additional software

Install other software only as it applies to your practice and purchased modules. Please call our telephone support professionals for assistance.

2.1.2 INSTALLING THE SENSOR DISK

The Sensor Disk contains data specific to your particular sensor. It is used by the DEXray software to maximize the image quality. Please see the DEXIS User Manual for further information.

2.1.3 ADDING INITIAL INFORMATION

Once DEXIS Enterprise Edition is installed you will find a DEXIS icon on your desktop.

To initiate the DEXIS Administration program, double-click on this icon. A window will appear asking for your Practice Name. Type the name exactly as you want it to appear on printouts. Click “OK” when done.

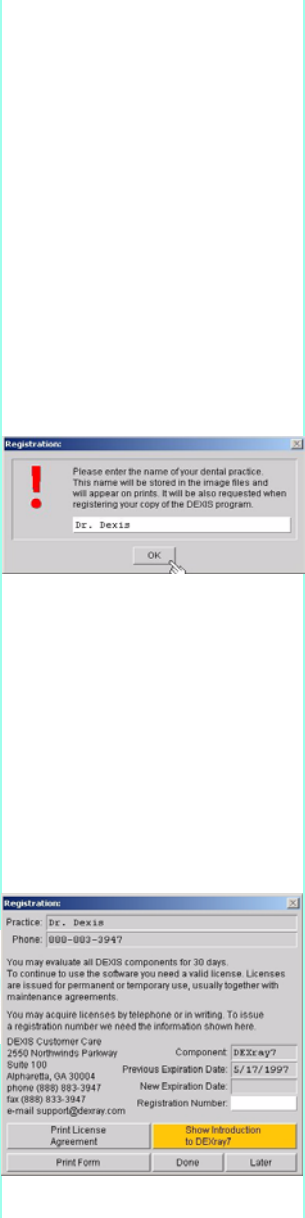
Next, you will be asked to enter your telephone number. Type it in and click “OK.”

Now, you will be asked to enter a new patient. For setup and test purposes, enter a test patient. Type in an ID (such as “Xooo1”), a last name (such as “Test”), and a first name (such as “Test”). Click “Done.” You will now have full view of the DEXIS Administration screen, and patient’s name, Test Test, will appear on the screen.

2.1.4 OBTAIN REGISTRATION CODES

From the DEXIS Administration screen, click on the “wrench” icon and then click on “Component Licensing”. Call DEXIS Technical Support for registration codes for your purchased components. One of our technical representatives will walk you through the process.

When you click on the button next to the component name or upon opening a DEXIS component that needs a separate license, you will be asked to register. You may choose “Later” and this way try the component for 30 days.



For a preview of non-registered components, click on the *Show Introduction to...* button.

Note: Introductions are not present for all components. If there is no introduction for the component you are trying to register, the button is not shown.

Should you wish to make any changes to your practice name or telephone number you will need to re-register your programs.

Your DEXIS System can now be used to take X-rays and to store them on the local computer. Please consult the DEXIS User Manual, Chapter “Installation Verification and Testing” for verification and testing of the core system.

2.2 CONFIGURING DEXCOM

Open DEXIS Administration, click on the Wrench icon, then select DICOM as the Image Format to use. If you select a different format DEXcom needs to convert every image before storing it on the DICOM Server.

Now select *DEXcom Configuration* to set DICOM networking related parameters, and add and modify DICOM servers you want to communicate with.

2.2.1 SET WORKSTATION PARAMETERS

The *DEXcom Configuration* dialog will show the host name of your computer. You have to add information in the two fields *Input Port* and *Application Entity Title*. Both values have to be made known to the DICOM Server as well. They enable communication with the server.

2.2.2 ADD A DICOM SERVER

Click on *Add Server* to add a DICOM Server to the list of servers you want to communicate with. You are then asked to enter the coordinates of the server:

- *Friendly Name* is the name that is listed in the DEXIS Software wherever a DICOM Server can be selected.



Tools & Preferences

General | Administration | DEXray | DEXimage

Component Licensing | DEXcom Configuration

Image Format: DEXIS | **DICOM** | Tiff

DEXcom Configuration

Machine Name: HF-V&IO

Input Port: 1007

Application Entity Title: DEXcom-Test

DICOM Server Configuration

Friendly Name: VA-Worklist

Host Name or IP Address: 205.128.215.89

Input Port: 62010

Application Entity Title: VistA_Worklist

Time Out: 5

☐ Automatically Store New Images Here

☐ Verify Server

- *Host Name or IP Address* identifies the server computer. If this is a local computer, its Host Name can be given; if this computer is to be accessed over the Internet, its IP Address needs to be given.
- *Input Port* is the port address the server listens on for incoming requests.
- *Application Entity Title* identifies the server software.
- *Time Out* specifies the time in seconds you want to wait for the server to answer. Enter “3” for computers to be accessed over the Internet, enter “1” for local computers. Increase this value if the server often does not answer in time.
- Check *Automatically Store New Images Here* if you want DEXcom to store all newly acquired images on this server without user intervention.

When you have entered the server, verify communication by clicking on *Verify Server*. You will get a positive or negative answer.

2.2.3 MODIFY SERVER PROPERTIES OR DELETE SERVERS

In the *DEXcom Configuration* dialog click on the down arrow to the right of *Modify Server* to display the list of entered servers. Select the server to modify, then click on the button to the left. The *Server Configuration* dialog will be displayed and you can modify all parameters as described above.

To delete a server from the list, click the down arrow to the right of *Delete Server*, select the server to be deleted, and click the button to the left.

